

**Notice of Allowability**

Application No.

10/046,220

Examiner

Albert W. Paladini

Applicant(s)

KUKULA ET AL.

Art Unit

2125

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 1/16/02.
2. ☒ The allowed claim(s) is/are 1-34.
3. ☒ The drawings filed on 16 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 1/16/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.



***Reasons for Allowance***

1. The following is an examiner's statement of reasons for allowance: None of the references cited or the art searched disclose or teach alone or in combination the method of determining the sequential states in a finite state machine using the overapproximated and underapproximated path methodology in conjunction with the organized time sequence analysis using the state matrix, where a formally constrained underapproximated path that lies along the overapproximated path is determined.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Relevant Prior Art***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kohn (5963447) discloses architecture used to control distributed processes, where a Parallel Decomposition transformation decomposes the finite state machine into a parallel series of unitary automata. A unitary automaton is a finite state machine with a single initial state and a single terminal state. Cascade Decomposition then transforms each unitary automaton into a series of a prefix automaton followed by a loop automaton. A prefix automaton



is a unitary automaton, which has no transitions from its terminal state, and a loop automaton is a unitary automaton whose initial state and terminal state coincide. The Linearization modifies the loop automaton by incorporating a new terminal state, which has the same edges as the initial state of the loop automaton and forms a base automaton. Then the inaccessible states are trimmed from the resulting automata and the entire decomposition procedure is repeated if necessary. Whenever an automaton is produced in this decomposition which consists of a single path from the initial state to the terminal state, such an automaton is called a path automaton, it corresponds to a successful path in the original finite state machine and an output is produced.

Scandura (6275976) discloses an automated method for building and maintaining software using a finite state machine type of analysis where a specification hierarchy is built, and the hierarchy is modified according to system constraints in a manner which insures that the constraints implemented on any level of the hierarchy is transmitted to the lower levels.

Garland (6289502) discloses a method for developing a software implementation of a distributed system. The method includes accepting a first design specification including accepting specifications of a first set of state machines, and accepting a specification of a first set of desired properties of the first set of state machines. The method also includes applying a first validation procedure to the first design specification to verify that the first set of state machines has the first desired properties, including applying a theorem proving procedure to the first design specification. The method also includes accepting a second design specification, including accepting specifications of a second set of state machines, and accepting a specification of a desired relationship between the first set of state machines and the second set



of state machines. The method further includes applying a second validation procedure to the second design specification to verify that the first set of state machines and the second set of state machines have the desired relationship, and for each of the second set of state machines, applying a code generating procedure to the specification of the state machine to generate a software implementation of that state machine.

Cook (6668203) discloses a state machine model which analyzes sensor data from dynamic processes where the initial state must be specified and actual processes are compared with expected processes, and concurrencies and discrepancies are identified for each facility being monitored.

Sarkissan (6789116) discloses a processor for processing contents of packets passing through a connection point on a computer network where state transitions are traversed as more and more packets are examined. Future packets that are part of the same conversational flow have their state analysis continued from a previously achieved state. When enough packets related to an application of interest have been processed, a final recognition state is ultimately reached, i.e., a set of states has been traversed by state analysis to completely characterize the conversational flow. The signature for that final state enables each new incoming packet of the same conversational flow to be individually recognized in real time.

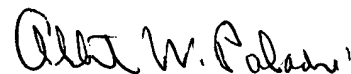


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3. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (571) 272-3748. The examiner can normally be reached from 7:00 to 3:00 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (571) 272-3749. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Albert W. Paladini  
Primary Examiner  
Art Unit 2125

August 9, 2005